

An Exploratory Study of the Effects of Mindfulness on Perceived Levels of Stress among school-children from lower socioeconomic backgrounds.

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Children from lower socioeconomic backgrounds are at increased risk of experiencing stress and associated social-emotional difficulties and behavioural problems, which can undermine academic performance and lead to school drop-out. Previous studies investigating the effects of mindfulness have evidenced positive outcomes among children pertaining to enhanced well-being, school-based competence and decreased levels of stress and anxiety. However, these studies have typically examined teacher's perceptions of change or quantitative outcomes without consideration of children's experiences. The present study employs an interpretative qualitative approach to gain a greater understanding of children's experiences of mindfulness in dealing with stress. A 5-week school-based mindfulness program was performed with 63 primary school children at risk of social exclusion in education. Interviews were undertaken with 16 children and 2 teachers. Thematic analysis identified five key themes labelled conceptualisation of stress, awareness, self-regulation, classroom regulations and addressing future stress. Quantitative measures of children's perceived stress levels evaluated at baseline and follow-up also revealed significant reductions post intervention. These findings offer support for the incorporation of mindfulness interventions into the school curriculum, as a means of empowering children to address stress in their lives and improving full participation in the education system.

Keywords: stress, mindfulness, children, social exclusion

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Introduction

Children today are experiencing stress at unprecedented levels (Mendelson, Greenberg, Dariotis, Gould, Rhoades, & Leaf, 2010). A national study undertaken in Ireland revealed that approximately three

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quarters of children had experienced some form of stressful life event within the last year, with the most common experiences pertaining to death of a close family member, moving house or parental divorce or separation. These findings are of concern given that children who experience four or more stressful life events are at increased risk of developing emotional problems associated with hyperactivity or inattention (Williams et al., 2009).

Many factors however, interact to create children's perception of stress including everyday hassles which have been identified as contributing more strongly to psychological and behavioural problems than major life events (Byrne, Thomas, Burchell, Olive & Mirabito, 2011; Compas et al., 1994). In line with this argument, a study undertaken in the UK revealed that nearly half of all children surveyed reported being unable to sleep as a result of stress owing to exams, family problems, bullying or friendship concerns. Furthermore, over half of those surveyed indicated that they felt worried or sad at least once a week (YouGov, 2013). These findings underscore the need to develop and implement effective interventions that enable children to recognise and cope effectively with daily stressors.

Stress is defined as the body's fight-or-flight response, a natural state that is experienced mentally and physically whenever a threat or danger is perceived, along with a feeling of being unable to cope (Perry, Pollard, Blakley, Baker & Vigilante, 1995). While stress is a natural and necessary process in children's lives, it needs to be acknowledged, managed and channeled by every child individually, in order to prevent negative outcomes. Children in the social welfare system, who come from families at greater risk of poverty, have an increased prevalence of stress and mental health problems compared with those in the general population (Dore, 2005). Poor and minority children are more likely to be exposed to physical abuse and family violence, resulting in greater experiences of stress. In addition, insecurely attached children at high economic risk have higher levels of stress and depression than insecurely attached children at lower economic risk (Graham & Easterbrooks, 2000). Exposure to multiple poverty-related risks therefore negatively impacts on children's emotional self-efficacy (West, Denton, & Reaney, 2001). It is children's own perception of their capability to cope, or not cope, with stress which determines what goes unnoticed and what becomes a problem (Heubeck & O'Sullivan, 1998). Children from more disadvantaged backgrounds are therefore at increased risk for a range of negative outcomes including anxiety, depression, low self-esteem, aggressive behaviour and conduct disorders (Napoli, Krech, & Holley, 2005; Parker & Roy, 2001). In turn, children suffering from social-emotional difficulties and behavioural problems are more likely to struggle at school, underperform academically and drop-out. The negative impact of stress on psychological and physiological functioning underscores the importance of having an effective stress management strategy which is amenable to children (Shapiro, Brown, & Astin, 2008).

Schools serving children from lower socioeconomic backgrounds have demonstrated increasing interest in reducing children's stress levels, but difficulties have been reported in identifying effective programs that are easy to implement on a broad scale (Barnes, Bauza, & Treiber, 2003). One approach to this growing problem may be to introduce mindfulness into the curriculum as a possible method of stress reduction among children (Napoli et al., 2005). Strategies designed to address stress should be a fundamental part of any successful education program as children can benefit from programs teaching positive coping

skills and prevention of psychological and behavioural problems associated with high stress environments (Elkind, 2001; Klatt, Browne, Harpster, & Case-Smith, 2012). Limited research however, has examined whether mindfulness interventions delivered by class teachers can enable stress reduction in children (Barnes et al., 2003).

Mindfulness

Mindfulness is a 2,500 year old tradition which focuses on individual inner experiences. The term mindfulness refers to the ability to direct attention to experiences as they unfold, moment by moment, with open-minded curiosity and acceptance (Kabat-Zinn, 2004). It is how attention is focused that directly shapes the mind, thus, when a certain form of attention is developed to present moment experiences and to the nature of the mind itself, a new form of awareness, called mindfulness, is created (Siegel, 2007). Mindfulness enables those who practice it to be better able to be with their present experience, and respond more skillfully to what is actually happening in the present moment. Therefore, mindfulness is in direct contrast to the state of mindlessness, whereby one moves through experiences, rarely noticing the present moment, ruminating instead on what happened in the past, or worrying about the future.

Researchers in the field acknowledge that ruminations may be linked to anxiety, and therefore, believe it is important that these involuntary responses are recognized and interventions such as mindfulness are in place, especially for stressed children at-risk, as it can enable the observation of mind traps which may contribute to stress reactions (Roelofs, Rood, Meesters, TeDorsthorst, Bogels, & Alloy, 2009; Wadsworth, Raviv, Compas, & Connor-Smith, 2005). Mind traps are mental habits that exacerbate stress, such as negative self-talk, whereby children are often very hard on themselves, self-criticising or perceiving oneself to be worthless, useless, or not good enough (Brantley, 2007). When this happens, children become their own worst stressors, as this additional criticism and adverse self-judgment amplifies perceived stress. Mindlessly allowing these thoughts to develop can lead to increased stress, whereas mindfulness allows children to recognise the adverse effects of these mind-traps, and gives them space, which is always present in the present moment, between sounds, words, or outside noise, and between the experiences of inner life, such as the sensations of each breath, or the thoughts in the mind (Brantley, 2007). Learning not to judge thoughts, feelings or experiences as right or wrong, good or bad, or endeavoring to change them is closely linked to the mindfulness method of reducing persistent rumination. Intrusive and ruminative thoughts are involuntary responses to stress, and often children's first response to stressful situations, which may contribute to the cumulative effects of chronic stress (Shonkoff, Boyce, & McEwen, 2009).

Mindfulness enables children to refine their awareness of the present moment, and opens important avenues for the mind to come to know itself and reflect on the inner nature of life, on events of the mind that are emerging, moment by moment (Goleman, 2008). Within mindfulness, there is an initial use of the breath as a focal point in which to centre the mind's attention. The experience of mindfulness may be conceptualised as in the words of Frankl (2006), "between stimulus and response there is a space. In that space is our power to choose our response" (p.154), whereby he believes man does not simply exist but always decides what his existence will be, and what he will become in the next moment. Downes (2012) further describes breathing as

a mode of awareness, stating that “the fabric of the breath is the spatial throbbing to hold thought” (p. 274). Accordingly, something as simple as training the attention on one specific focus, and bringing it back to that one focus over and over again, as in mindful breathing, may actually change the structure and size of certain areas of the brain, particularly those areas that are used for managing emotions like stress (Siegel, 2011).

School-based mindfulness interventions

The potential of mindfulness as a skill in managing stress has been recognised in recent years, and training in mindfulness is now being used and accepted in educational establishments (Kabat-Zinn, 2004). The implementation of mindfulness training in school settings is relatively new however, and therefore requires further investigation. Various mindfulness-based interventions have been adopted with a key component comprising the regular practice of mindfulness meditation. Initial reviews of existing mindfulness programmes offer support for the use of school-based mindfulness programmes in reducing internalising and externalising behaviours and increasing positive school engagement among children and adolescents (Burke, 2010; Greenberg & Harris, 2012). Such mindfulness approaches also demonstrate positive psychological and behavioural outcomes among children from lower-socioeconomic backgrounds. Accordingly, Broderick and Metz (2009) examined Learning to Breathe, a mindfulness based stress reduction programme among school children. They found increased calmness, relaxation, and awareness in addition to reduced negative affect among children, as determined by teacher reports. In line with these findings, Napoli et al. (2005) evaluated a mindfulness based programme that integrated relaxation among 228 children who demonstrated high anxiety levels. Comprising a 24-week duration, significant improvements in self-rated test anxiety, teacher rated attention, and social skills were evidenced following the intervention.

Further research undertaken by Mendelson et al. (2010) on 97 urban fourth and fifth graders evidenced improvements in emotional self-regulation following a six-week mindfulness intervention programme. Additional support for the feasibility of school-based mindfulness programmes comes from Huppert and Johnson (2010) who evaluated the *Mindfulness in Schools Project* (MiSP) among a sample of 155 adolescents in the UK. The programme consisted of nine scripted lessons, delivered weekly by teachers over a four week period. The results indicated that students who undertook ten minutes of home practice a day evidenced significant improvements in well-being, with smaller changes noted for those who did not engage in daily practice. Whilst this study indicates that short interventions can be effective in promoting positive psychological outcomes, it is unclear how such a programme may influence perceived levels of stress.

Focusing specifically on low-income, ethnic-minority primary school children, Black and Fernando (2013) investigated the effects of a five week mindfulness programme comprising mindful meditative practices to help children pay attention, build empathy, increase self-awareness, improve self-control, and reduce stress. Immediately after the intervention, significant improvements in children’s behaviour were evidenced pertaining to increased attention, self-control, classroom participation, and respect for other. In addition, Klatt et al. (2012) conducted research on an eight-week mindfulness-based program, *Move-into-Learning* (MIL), administered to third-class children at a low-income, urban primary schools. The MIL

program involved weekly 45-minute sessions, which included mindfulness meditation and breathing exercises. At the end of the programme, teachers reported significantly less hyperactive behavior, ADHD symptoms, and inattentiveness among the children. These findings offer support for the application of mindfulness based approaches in reducing perceived stress levels among underserved primary school children. However, these studies predominantly employed quantitative methods, which do not allow for investigation of children's meaning or perspective regarding mindfulness experiences and associated outcomes.

The present study will therefore attempt to address this existing gap within the literature and expand on previous studies by examining the effects of daily mindfulness practices, delivered by class-teachers over a five week period, on perceived levels of stress among primary school children from areas at risk of socioeconomic exclusion.

Method

Participants

The sample comprised of 63 children (17 boys and 46 girls) who ranged in ages from 11-12 years. Participants were recruited from 6th class from two schools at risk of socioeconomic exclusion in Dublin, Ireland. Four teachers also took part in the programme and delivered the mindfulness programme in their classrooms. Additionally, two teachers were subsequently interviewed along with 16 children.

Procedure

Ethical approval to conduct this study was obtained from St Patrick's College ethics committee. School principals were contacted and permission to access students was requested. Class teachers were subsequently invited to take part in the study and deliver the mindfulness programme over a five-week period in their classrooms. All participants returned parental consent forms and provided informed consent. Prior to commencing the intervention, a pilot study was conducted with two participants to evaluate the core components of the mindfulness programme. No modifications were deemed necessary from this study.

Prior to implementation, the researcher met with the class teachers and presented an overview of the program and answered teachers' questions. All teachers were provided with the script for each daily mindfulness session, to read in class to the children. Additionally, teachers were provided with a CD which provided an audio of the 25 practices, which they could choose to play for the children, instead of reading the text, should they so wish. Teachers were also provided with the necessary support materials of pebbles, bubbles and simulated jewels which were required for some sessions. Children recorded their feelings and experiences in self-reflective journals, provided by the researcher, following each mindfulness practice. Self-report stress surveys were also completed prior to, and following the mindfulness intervention. Semi-structured interviews were subsequently conducted with 16 children and 2 teachers to elicit their views on what impact the intervention had on perceived levels of stress.

Perceived Stress Scale

The Perceived Stress Scale (PSS-10) (Cohen, Kamarck, & Mermelstein, 1983) was used to measure children's perceptions of stress over the past month, prior to and following the intervention. The scale consists of 10 items that measure the degree to which respondents found their lives unpredictable, uncontrollable, and overloaded within the last month, (e.g. 'In the last month, how often have you been upset because of something that happened unexpectedly?'). These three issues have been found to be central components of stressful experiences (Seligman, 1975). Responses were scored on a 5-point Likert scale ranging from never (0) to very often (4). Higher scores reflect increased perceptions of stress. A score of around 13 is considered average, whilst high stress groups demonstrate scores of 20 points and upwards (Cohen et al., 1983). The PSS-10 has previously demonstrated adequate internal consistency (Cohen & Williamson, 1988), and satisfactory reliability coefficients ($\alpha = .74$) were also reported for children in the present study.

Mindfulness Intervention Programme

The primary aim of the mindfulness intervention programme was to equip children with the means of responding to stress by enabling them to step out of their mental reactions, which often worsen stress and interfere with effective problem solving. The intervention was based on two existing mindfulness programmes for children, i.e. *The Mindfulness-based Cognitive Therapy for children* (MBCT-C) (Segal, Williams, & Teasdale, 2002), and *The Mindfulness-based Stress Reduction course for children* (MBSR-C) (Saltzman & Goldin, 2008). *The MBCT-C* is a twelve-session intervention developed to address children's anxiety, using aspects of mindfulness (Semple & Lee, 2008). *The MBSR-C* is an eight-week program that is developed to provide children with a weekly experience of a still quiet place within themselves, from which to respond rather than react to stressful events (Saltzman & Goldin, 2008). Additional avenues explored include mindfulness CD's such as *Stillness in the Classroom* (The Sanctuary, 2008), *Zone for Kids* (Mindfulness Matters, 2012), and *Still Quiet Place* (Saltzman, 2004).

The intervention was designed to encompass a clear progression in daily mindfulness practices over a five-week period. The duration of the practices varied between a minimum of 3 minutes during the first week to a maximum of 12 minutes in the final week. Incorporating mindfulness into children's daily lives was proposed to build continuity, sustain motivation, bring awareness to thoughts that may be causing stressful feelings, and subsequently enable participants to address perceptions of daily stress. Week one comprised short practices with the initial focus on breath awareness, belly breathing and awareness of the body and sounds, followed by feelings and thoughts. Week two introduced the still quiet place inside oneself and the body scan, whereby participants are taught to focus on their breathing and then progressively and methodically tune their awareness to each body part, followed by intentionally relaxing each part of the body from their toes to the top of their heads. Week three progressed to a sense of wonderment, the still inner space inside oneself, and bubble-blowing, which is a useful mindfulness technique that enables children to slow down, observe their thoughts and let them go without judgment (LeShan, 1974). Week four entailed exploration of the five senses, in addition to breathing for relaxation, and focusing on how to be cool, calm and confident. Finally, week five progressed to longer sessions, which included visualizing, nature and planting, loving kindness, talking to one's Guardian Angel, and a healing-lake visualization, whereby

participants are encouraged to watch and observe the lake carefully and notice that it is always changing, yet it is also always itself. Following each mindfulness session, participants completed reflective journal entries in which they were encouraged to write or draw freely on their experience.

Qualitative analysis

Semi-structured interviews were undertaken to elicit children's perspectives on their experiences of mindfulness in relation to perceived stress. All interviews were audio-recorded and transcribed verbatim to gain familiarity with the data, as a first step in the interpretation process. Journal entries and interview transcripts were then analysed thematically (Braun & Clarke, 2006). Transcripts were read several times and brief verbal descriptions were initially applied line by line to the dataset. Similar quotes considered to reflect the same meaning were then grouped together and assigned a code, which were then integrated in an attempt to identify broader themes. A final selection of particularly vivid themes or extracts (Braun & Clarke, 2006) was chosen to illustrate the effects of mindfulness on children's perceived stress levels.

Results

Perceived Stress Scale

A paired-samples t-test revealed a significant decline in children's perceptions of stress from Time 1 ($M=18.12$, $SD= 6.66$) to Time 2 ($M=14.4$, $SD= 6.5$) ($t(59) = 4.74$, $p<.001$ (two-tailed). However, while the mean stress score decreased following the mindfulness intervention, the average score remained in excess of 13, therefore many participants continued to be classified within the high-stress category. Notwithstanding this, the results indicate that participants' experience of learning mindfulness had a positive influence on perceived stress levels.

Qualitative analysis

Following a thematic analysis of the data, five major themes were identified which captured children's experiences of mindfulness in relation to perceived stress. These themes were labelled as conceptualisation of stress, awareness, self-regulation, classroom relations, and addressing future stress. Themes and sub-themes are presented in Table I.

Conceptualisation of stress

Definition of stress: There are many definitions of stress therefore, it is important to examine children's own personal understanding of this term. One participant described stress as feeling annoyed, for example, "once I am angry, it takes quite a while for me to calm down". Other definitions included anxiousness, worries, embarrassment, fearfulness, frustration, irritation, and upset. A feeling of being unable to cope was also central to this experience as one individual explained "it means you can't really stay on top of everything" and "it's having too much on your mind". Stress results in both physiological and psychological outcomes for some, described by one participant as "stuff in my stomach, and I feel kind of

Table I. Summary of themes and sub-themes

Theme	Sub-theme
Conceptualisation of Stress	Definition of stress Causes of stress
Awareness	Present moment awareness and calmness Concentration Stress reduction
Self-regulation	Regulation of thoughts and feelings Rumination and mind-wandering Emotional reactivity
Classroom Relations	Regulation of classroom behaviours Mindfulness fun
Addressing future stress	Transition to secondary school Home-related stress

nervous, it's like, kind of tickling me in the stomach, and you're thinking you're going to do fine, but then you're still stressed".

Causes of stress. Children identified various causes of stress in their own lives, such as fights or disagreements with parents, siblings and friends, as well sadness due to family sickness, absences and death. One child stated that stress emanates "if I have a fight with me mam, if me and me friends had a disagreement...If people don't pay attention to something that you say, something that could be important". Another child elaborated on the multiple hassles experiences within the home environment:

When my brother is annoying me or something, then I get angry. If my mam doesn't agree that I'm right about something, if no-one believes me and like my brother is sick right now and when you think about your brother being sick it's kinda upsetting and that makes you feel stressed, like when you think about what's going to happen in the future.

Other causes of stress stem from pressure of having too many things to do and being unable to cope, as well as worries about the future. The children's comments demonstrate awareness of stress in their lives, and it is through awareness that they will be enabled to address these feelings, as mindfulness is about accepting whatever arises in your awareness.

Awareness

Present moment awareness and calmness: Enhanced present-moment awareness was identified as an outcome of mindfulness with the majority of participants referencing associated physiological consequences. For example, one pupil wrote in his journal "I felt my shoulders when I breathed and I never noticed it before" while another stated "I could feel my spine expanding, and going back down again...I noticed that

and didn't before". Physiological benefits were also reported as one child explained "I had a headache before and felt horrible but when I relaxed and concentrated on my breath I felt much better". Positive psychological consequences were also identified such as increased calmness "I felt irritated at first, but now I feel calmer". Other children indicated that "I like doing breathing when I feel nervous, irritated and angry", "I felt cool and collected when I was breathing", and "the breathing exercise really calms you if you're feeling down". Similarly, this was reflected during interviews, whereby one pupil stated that "it's like holding a bag of stones, and they turn into feathers".

Concentration. Concentration refers to getting the mind to settle down and find a place where it can feel stable, where it can look at things steadily and see them for what they are (Bhikkhu, 1999). Improved concentration was a benefit of practicing mindfulness that was identified by many children. As one boy stated, initially he found it difficult to focus because there were people messing but then he couldn't hear them "it was like I was in a silent room and that's when the breathing helped me". Some participants reported on difficulties encountered with concentration, due to stressful invading thoughts, mind wandering and ruminations. However, they now recognize when this is happening, and therefore are enabled to bring their concentration back to their breath.

Stress reduction. By becoming more aware of their stresses, many participants recognised that they could detach themselves from these feelings. Almost 40% of those interviewed, stated that they put their stress and worries into bubbles or balloons and when they floated away they felt calm and relaxed. This is evidenced by one participant who noted that "before the breathing I felt very sad inside but still I put a smile on my face ... and now I'm happy on the in and on the outside". Mindfulness enables children to improve their ability to tolerate stress and to recognise that there are choices in how to respond to stressful situations (Shapiro et al, 2008), and the intervention appeared to be successful in this respect. For example, one participant states that when she is mindfully breathing, she finds it easier to deal with stress:

I would breathe in and out, and I would count to three and I'd just try to, like, think in my mind, so whatever I am worried about, or stressed about, would sort of, well, it wouldn't go, but it wouldn't be as bad, it would be more easier to handle.

Some participants appear to detach themselves from their stressors, as demonstrated by one individual who stated that "I actually felt like I was losing my head, like I was in my dream when I was breathing in and breathing out, I felt like I wasn't stressed". It is interesting that she draws comparisons with her dreams as Freud maintained dreams were the royal road to the unconscious (Freud & Crick, 1999), while Williams and Penman (2011) argued that information is not buried in the unconscious as Freud suggests, but lies just below the radar and is accessible with mindfulness.

Some participants however, did not experience such positive outcomes indicating that mindfulness did not reduce their feelings of anxiety. For instance, one participant noted that "before I started the session I felt upset and stressed and after the session I still do feel stressed and upset". Another individual stated that "after putting everything in my helium balloon, I feel very happy, but I'm still very worried about it since I keep thinking about it, but the more I try not to think about it, the more I keep thinking about it". Another boy felt that the experience led to more negative feelings, whereby even though he put his stress in the balloon it

did not work, and instead he felt “a pile of stress” coming on him. These experiences suggest that mindfulness may affect some children differently and further investigation may be needed to examine the factors that contribute to these differential experiences.

Self-regulation

Regulation of thoughts and feelings. Many participants reported improved self-regulation, as evidenced by comments such as “I am normally grumpy in the mornings, but now I am calmer” and “I’m not really that cheeky anymore, I have copped on”. Participants also experienced changes in the relationship with their thoughts, in that they became more aware of them, as well as detaching from them, thereby observing them from a new perspective. Participants’ experience of sustaining attention on the present moment represents an awareness of thought processes related to self-regulation or meta-awareness. This is evidenced from the many journals entries which depict participants detaching from their stressful thoughts and feelings, which they send away in bubbles or balloons. As thoughts are viewed impartially, this would prevent the development of ruminative thoughts, involuntary responses to stress that are likely to be children’s first reactions to stressful situations (Compas, Connor, Saltzman, Thomsen, & Wadsworth, 1999).

By practicing mindfulness, children’s thoughts, sensations, emotions, and everything else that makes up their perception of stress become evident, leading to improved regulation of thoughts and feelings. One participant acknowledged that mindfulness taught her how to control her worries, stating “when I’m feeling stressed, it taught me how to feel better...if you’re feeling worried, you can just blow and the worries can float away”. Another participant drew an interesting analogy stating that “it just clears your mind, it’s like holding a bag of stones and just dropping it”. Mindfulness therefore enables a process of re-perceiving, resulting in increased clarity and a sense of separateness when present-moment experiences are observed (Shapiro et al., 2008).

Rumination and mind-wandering. Through mindfulness, participants were enabled to recognise how their minds wander and become invaded by stressful thoughts, sadness, persisting ruminations and worries. Rumination appears to be an attentional difficulty experienced by some, in which there is a struggle between overwhelmingly sad feelings and a desire to avoid such feelings. Many children made specific reference to experiences of persistent ruminations, identifying how mindfulness helped them acknowledge these experiences, let them go and return to focusing on their breath. For example, “It felt as if all my worries just floated away”, and “I feel better about what I was thinking about”.

However, others struggled to conquer their ruminations as demonstrated by one boy who revealed that “I tried to clear my mind but I’m still worried... my head is filled with lots of things. It’s like I’m holding two big pots filled with hundreds of heavy things”. Mindful awareness provides a means of breaking this rumination cycle by cultivating an attitude of acceptance and kindness, along with being receptive to emotions as they arise and unfold (Segal et al., 2002). Mindfulness reminds pupils of where they are in the process of breathing, and they can notice if their attention is wandering, and gently bring it back to their breath, should they so choose; “the faculty of voluntarily bringing back a wandering attention, over and over

again, is the very root of judgement, character ... an education which should improve this faculty would be the education par excellence” (James, 1890, p. 463).

Emotional reactivity. Children’s experiences of stress often led to emotional reactivity such as crying, being upset, feet stomping, screaming or other explosive reactions. These responses often impacted on health, resulting in frequent reports among children of feeling sick in the stomach or suffering from headaches. Continued emotional reaction to stress can result in increased vulnerability to lifelong problems in learning, behaviour, and overall health (National Scientific Council on the Developing Child, 2007). Accordingly, Downes, Maunsell, and Ivers (2007) highlighted the need for emotional support services in education, particularly in contexts of high stress associated with poverty and social exclusion. Mindfulness enables children to be with their own experiences, promotes acceptance, reduces emotional reactivity, and in turn reduces ruminative thought patterns (Coffman, Dimidjian, & Baer, 2006).

Classroom relations

Regulation of classroom behaviours. Reduction in classroom stress was a primary outcome of the mindfulness intervention according to both teachers and pupils. One teacher felt that “huge progress has been made” in terms of dealing with pupils’ stress. The second teacher was in agreement stating that “I really found the mindfulness worked and was so effective for them” adding that a lot of children had issues at home, which they bring to school. Similarly, the pupils felt that mindfulness had a positive impact on stress levels, as one pupil revealed “when you wake up you feel a bit tired, and you might be angry sometimes, but then you come in and do it and it helps to calm you down”. Participants also believed that classroom behaviour had improved following the mindfulness interventions. One pupil gave an insight into her adverse behaviour when experiencing low-competence in class, stating “when we are learning, sometimes I’d get a bit angry, because I’d get an answer wrong. I’d do mindfulness now, like I’d breathe, and that would help me, I’d calm down”. Another participant identified how mindfulness could be beneficial in school “if you are nervous over a test, just breathe and it will work”. Teachers also alluded to the effectiveness of mindfulness in the classroom with one stating that “we are doing some SIGMAS and MICRAS now, and before we start, we will do a few minutes of mindfulness to focus them”.

Improvements in student behaviour and classroom climate were also reported. One girl revealed that mindfulness helped her personally, “in our class, like, there is these kinda yellow-card yokes [for misbehaving], like I got a yellow-card a few times, but I haven’t got a card in ages now”, and reflected that “it changed my behaviour and I worked better”. Another student reported that mindfulness “helps you to stay out of trouble”. Children also discussed outcomes at a class level with one pupil suggesting that other members of the class “don’t mess really that much now, they don’t get into trouble...coz when we were doing mindfulness, some people weren’t getting the yellow cards...and in five weeks, well they haven’t got one since we started”. The benefits to the class are clearly demonstrated by another participant who commented that “it really relaxed most of the class and we were calm for the rest of the day”.

One of the teachers also observed a reduction in disruptive behaviour following the mindfulness intervention stating “they are not as reactive as they would have been before”. The other teacher agrees

stating “with my class, there are lots of issues going on at home with different children, and they obviously bring it with them to school...before there was a real sense of panic, whereas now, there is a real sense of calm”. These findings support previous studies that have found that mindfulness contributed to increased classroom social competency, improvements in paying attention and self-control, and less hyperactive behaviour and inattentiveness (Black & Fernando, 2013; Klatt et al., 2012; Schonert-Reichl & Lawlor, 2010).

Mindfulness fun. The majority of participants commented favourably on the fun element incorporated into the programme, for example, one girl enjoyed mindful bubble-blowing “coz it was kinda different, like when I thought of mindfulness I just thought of breathing in and out, but that one was kinda different and it was kinda fun”. Similarly, another participant stated “it was fun, the bubbles were floating in the air and it’s like your mind is in it”. One child reported that “It was the most fun course...not only are you focusing on breathing you’re also having fun!” Saltzman & Goldin (2008) argue that mindfulness programmes must be fun and engaging to maintain interest and involvement among children. Elkind (2001) concurs, and states “play is nature's way of dealing with stress for children” (p.197). With empirical research indicating that 59% of children feel worried or sad at least once a week (Yougov, 2013), mindfulness appears to provide a simple, fun technique to enable children’s “worries disappear”.

Addressing future stress

Transition to secondary school. Most people’s experience is that the mind does not rest steadily on the breath but moves restlessly from thoughts about the past to worries about the future, and the future for 75% of these children appear to embrace further stressors. However, they believe that mindfulness will prove beneficial in dealing with future experiences of stress, particularly in dealing with stressful experiences associated with the transition to secondary school. One pupil envisaged using mindfulness to help her deal with the stress stating that “on the first day of secondary school, when there’s a lot of people that I don’t know, I will just focus on my breathing and just forget about it”. Similarly, another revealed that mindfulness would prove effective “if you’re nervous, and you just need some quiet time maybe, go to the library and just like take a few minutes to calm down”.

Home-related stress. The majority of participants also indicated that they would continue to use mindfulness when faced with home-related stressful situations in the future. This is exemplified by one participant who imagined using mindfulness “at home, to calm meself down, when like things are annoying me, I would just go to my room and do it”. Another student reflected that previously “I’d kinda get angry at something, you know really angry, and something bad would happen and we’d fall out for ages”, but this would not happen now, “I’d be less stressed, and then we might talk, and then it would be all over”. Further support for the beneficial effects of mindfulness was evidenced by one participant who revealed that “when I had a fight with my parents like last week, I was just very angry and I felt like crying, then I just went up to my room, and I lay on my bed, and I just took deep breaths and just calm meself down”.

Thus, while the majority of pupils contemplated future stressful scenarios, they felt that they would be more reflective in how they would react and demonstrated an awareness that they need not succumb to former habitual, unhelpful behaviours. This enablement of reacting differently is supported by research

which demonstrates that mindfulness brings awareness to the brain's intention to act milliseconds before reacting (Libet, 1999) and this allows time to reflect on a situation instead of automatically reacting in a habitual manner (Segal et al., 2002).

Discussion

Previous research has found that mindfulness positively influences psychological and behavioural outcomes among children from lower socioeconomic backgrounds (Black & Fernando, 2013; Klatt et al., 2012). However, as previously stated, these studies have typically focused on parental and teacher reports, or quantitative outcomes without taking account of children's own perspectives. Therefore, the present study aimed to address this gap in the literature by exploring children's views on the effects of mindfulness on perceived levels of stress. In doing so, the research sought to further explore children's perceptions of stress, sources of stress and associated coping behaviours. The collection and analysis of children's view was essential to the research, as it was important that the ideas and views were based on the children's thoughts, and not dictated by the researcher (Lewis & Lindsay, 2000).

The mindfulness intervention consisted of short daily mindfulness exercises, focusing on bringing attention to the breath, which enabled children to accept present moment experiences. This was evidenced both in the incidents recounted during interviews and through journal entries. Several participants explained how they benefitted from mindfulness both in school and at home. Participants felt that becoming familiar with their thoughts and feelings enriched their understanding of themselves. Many gave recounts, which illustrate abilities to pause and be more reflective about how they react in certain stressful situations. Participants found that their mood was lifted, citing feelings of happiness, calmness and relaxation. Furthermore, mindfulness provided participants with a new resource to manage their stress. Notwithstanding this, some participants felt that mindfulness brought increased stress and some sadness, which demonstrates the need for caution when introducing mindfulness, as it may not be suitable for all children. Further research is needed to examine why some children may respond differently to mindfulness.

Different aspects of the mindfulness intervention were drawn upon in relation to experiences of awareness, which included visualization to bring awareness to the mind-body connection, and is something children can easily do, being naturally imaginative. Therefore, by relaxing into guided practices, participants enter their still quiet place, gaining new techniques to deal with stress. For example, in using the healing-lake visualization, participants were encouraged to observe the lake carefully and notice it's constantly changing, yet it's also always itself. When they still their mind, it becomes like the calm lake, and they are enabled to reflect as, similar to the lake, their minds only reflect when they are calm, which was recognised by one participant who reflected in her diary "I feel that the lake makes me relax. Just like the lake, I felt steady and calm". This concurs with Kabat-Zinn (2004), that, when fully open and awake to the present moment, the mind is "like a mirror that clearly reflects what comes before it" (p.109).

The majority of participants believed that mindfulness had been beneficial to them and several cited specific learnings. One participant commented that "I learned that you can just easily, em if you were angry, well you can just easily get over it by just breathing". Another participant indicated that "it would help me

calm down, and then I can learn, well try and learn". These findings are in line with Harvey (1990) who stated that "Calm tunes the mind, making it a more adequate instrument for knowledge and insight" (p.253).

The mindfulness intervention appears to contribute positively to children's perceived levels of stress by enabling them to deal with stress more effectively, resulting in more adaptive outcomes at both a personal level and more broadly in relation to classroom, school and home experiences. The majority of pupils commented that they looked forward to the daily mindfulness practices, which increased feelings of calmness and relaxation and consequently reduced perceived levels of stress. In addition, the mindfulness practices enabled participants to gain a deeper knowledge of themselves, allowing them to become familiar with thoughts and feelings and facilitating a means of distancing themselves from these should they so wish, which resonates with previous research indicating that regular mindfulness practice results in decreased stress and anxiety (Klatt et al., 2012; Mendelson et al., 2010). At the end of the five-week practice, participants had grasped key skills in mindfulness, and some also gained significant benefits in relation to self-understanding.

It is noteworthy that two participants initially found mindfulness upsetting but nevertheless chose to continue with the programme. Interestingly, of these two individuals, one later revealed that while she was sometimes upset by thoughts and feeling which arose during mindfulness, she felt she gained awareness and understanding of her sad feelings. The second participant found that as the weeks progressed he was enabled to recognise the stress in his life and chose to act differently. However, while mindfulness appeared to result in negative outcomes initially, continued practice led to more positive changes. A possible explanation for this is may be that these students were experiencing initially greater levels of stress and subsequently reacted more negatively, or alternatively required more time to achieve the associated benefits of mindfulness. Nevertheless, this finding advises caution as mindfulness could have been a negative and undermining experience for some children, something which has not been addressed in previous studies. Further consideration is therefore needed regarding possible resistance to mindfulness and maladaptive feelings following mindfulness practices.

Conclusion

As the research was undertaken on sixth class children in schools serving children from lower socioeconomic backgrounds, the findings are not sufficient to allow conclusions to be generalized to all such schools and children of different ages. However, it is reasonable to suggest that these perspectives may be representative of other school children and as such these findings may be tentatively considered as an example to other schools of the same type. A further limitation pertains to reductions in the quantitative measures of stress. Given that a control group was not included, the findings cannot be generalized outside the study participants.

Children from families who experience greater levels of poverty are at increased risk of stress and mental health problems compared with those in the general population (Dore, 2005). Mindfulness programmes have the potential to contribute to reductions in health inequality and improve wellbeing for all, by enabling children to maximise their capabilities and gain control over their lives. Furthermore, mindfulness

interventions are relatively cheap to introduce, can fit into a wide range of contexts, are enjoyable for pupils and demonstrate positive effects over a relatively short duration.

At school level, mindfulness programmes could be implemented as a subset of Social, Personal and Health Education (SPHE), which generally attempts to develop students' social and emotional skills, including self-awareness, the ability to manage emotions, optimism, persistence and resilience, all of which are outcomes of mindfulness.

This study highlighted the effectiveness of using mindfulness to enable school-children from lower socioeconomic backgrounds to address and reduce their stress. The findings should be of great interest to overstretched schools who are trying to find simple, cost effective and engaging means to promote the resilience of stressed students. This paper concludes with quotes from two participants which sum up the mindfulness experience: "I learned how to handle my anger and how to handle other things, and just how to handle my life", and "I felt as if I was lying down on a cloud floating around in the sky with the sun beaming right of top of me! I felt as if I was Peter Pan floating around" (Figure 1).

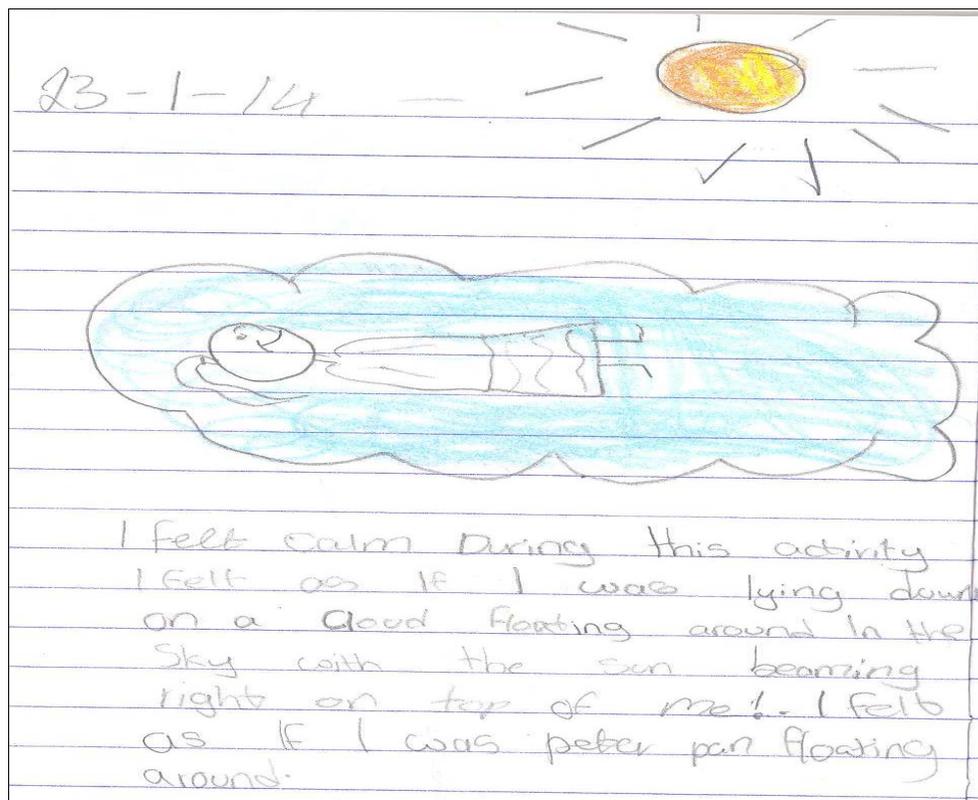


Figure 1. Peter Pan journal entry

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